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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,207	03/30/2001	Partha P. Tirumalai	SUN-P5446	6083

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EXAMINER

WOOD, WILLIAM H

ART UNIT	PAPER NUMBER
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2124

DATE MAILED: 06/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,207

Applicant(s)

TIRUMALAI ET AL.

Examiner

William H. Wood

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claims 1-20 are pending and have been examined.

Information Disclosure Statement

1. The Information Disclosure Statement filed on 26 September 2002 has been considered.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not state that the person making the oath or declaration acknowledges the duty to disclose to the Office all information known to the person to be material to patentability as defined in 37 CFR 1.56.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-20 recite the variations on the limitation "said rule of instructions" in independent claims. There is insufficient antecedent basis

for this limitation in the claim. It should refer to *said rule of instruction scheduling*.
Various dependent claims also lack correct antecedent basis for this limitation.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-6 and 8-20 are rejected under 35 U.S.C. 102(b) as being anticipated by **Aho et al.**, "Compilers: Principles, Techniques, and Tools".

Claim 1

Aho disclosed a method of optimizing at least two target machines (*page 14-15, section "Code Optimization"*), comprising the steps of:

- ♦ abstracting a rule of instruction scheduling for each of said at least two target machines (*page 463*);
- ♦ generating a hypothetical machine based on said rule of instructions (*page 12, first paragraph under section "Intermediate Code Generation"*); and
- ♦ targeting said hypothetical machine (*page 463, item 2.*).

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Claim 2

Aho disclosed the method of claim 1 wherein a rule of instruction scheduling for said hypothetical machine is a restrictive set of said abstracted rules of instruction scheduling of said at least two target machines (*page 20, section "Front and Back Ends", second paragraph; page 463, the necessary set of rules to target the machines*).

Claim 3

Aho disclosed the method of claim 1 further including the steps of:
detecting a conflict between said abstracted rules of instructions; and resolving said conflict (*page 20, second paragraph; conflicts being when the compiler must choose to follow actual rules for the actual target machine after the optimizing intermediate code step*)

Claim 4

Aho disclosed the method of claim 3 wherein said step of resolving said conflict includes the step selecting the less damaging option of said detected conflict (*page 20, second paragraph; "less damaging" is choosing the rules for the actual machine being targeted*).

Claim 5

Aho disclosed the method of claim 3 wherein said detected conflict corresponds to a conflict between a rule of instruction of one of said at least two target machines and a

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rule of instruction of another of said at least two target machines (*page 20, second paragraph; "less damaging" is choosing the rules for the actual machine being targeted verses a machine not currently being targeted*).

Claim 6

Aho disclosed the method of claim 1 further including the steps of:

modeling each of said at least two target machines (*page 12, "abstract machine"; page 20, target machine info in backend; and page 463, targeting several machines; some model therefore necessary of the several machines in order to target them*); and
retrieving scheduling information corresponding to each of said at least two target machines (*page 463, item number 1.; scheduling information is required for targeting machines*).

Claims 8-20

The limitations of claims 8-20 correspond to the limitations of claims 1-6 and as such are rejected in the same manner.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Aho et al.**, "Compilers: Principles, Techniques, and Tools".

Claim 7

Aho did not explicitly state the method of claim 1 wherein said at least two target machines include an UltraSPARC-II configured to operate at a speed of 360 MHz and an UltraSPARC-III configured to operate at a speed of 600 MHz. Official Notice is taken that it was known at the time of invention to make use of UltraSPARC-II and III processors configured at varying MHz ranges within their capabilities. It would have been obvious to one of ordinary skill in the art at the time of invention to implement the compiler system of **Aho** with UltraSPARC-II and III processors as known in the prior art. This implementation would have been obvious because one of ordinary skill in the art would be motivated to provide a retargeting compiler (cuts down on development time and cost; also page 463) for known machine architectures (they require compiling and optimizing of code).

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Correspondence Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William H. Wood whose telephone number is (703)305-3305. The examiner can normally be reached 7:30am - 5:00pm Monday thru Thursday and 7:30am - 4:00pm every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kakali Chaki can be reached on (703)305-9662. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-7239 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

William H. Wood
June 10, 2004

Kakali Chaki
KAKALI CHAKI
SUPERVISORY PATENT EXAMINER
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